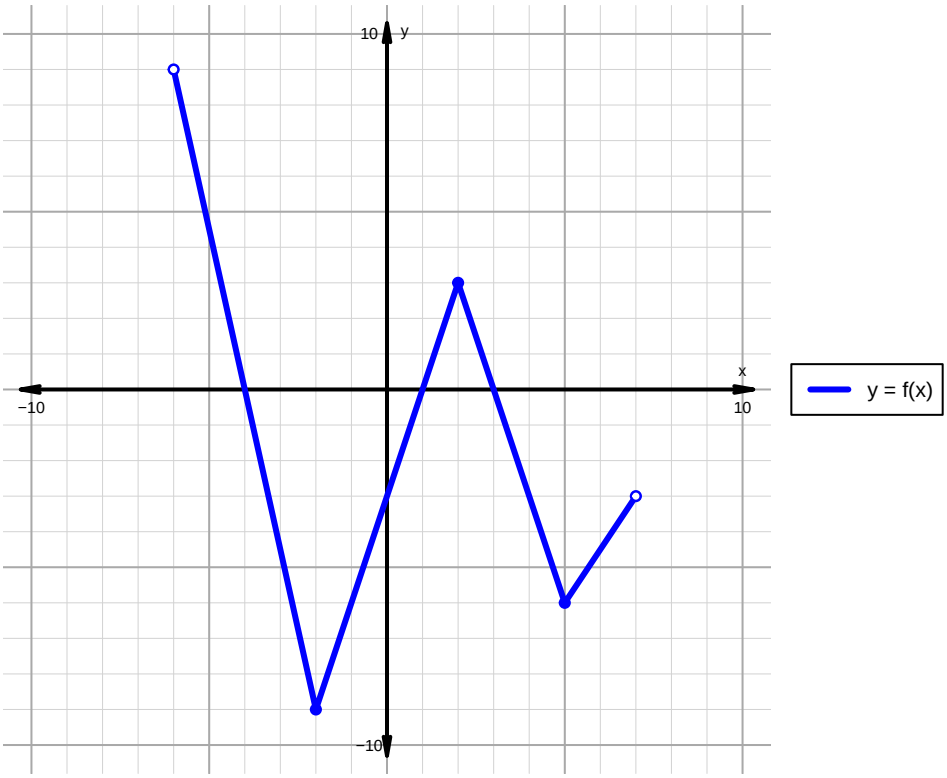
Name: Date:

Intervals, Transformations, and Slope Solution (version 110)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-6,-4)\cup(1,3)$
Negative	$(-4,1)\cup(3,7)$
Increasing	$(-2,2)\cup(5,7)$
Decreasing	$(-6,-2)\cup(2,5)$
Domain	$(-6,7)$
Range	$(-9,9)$

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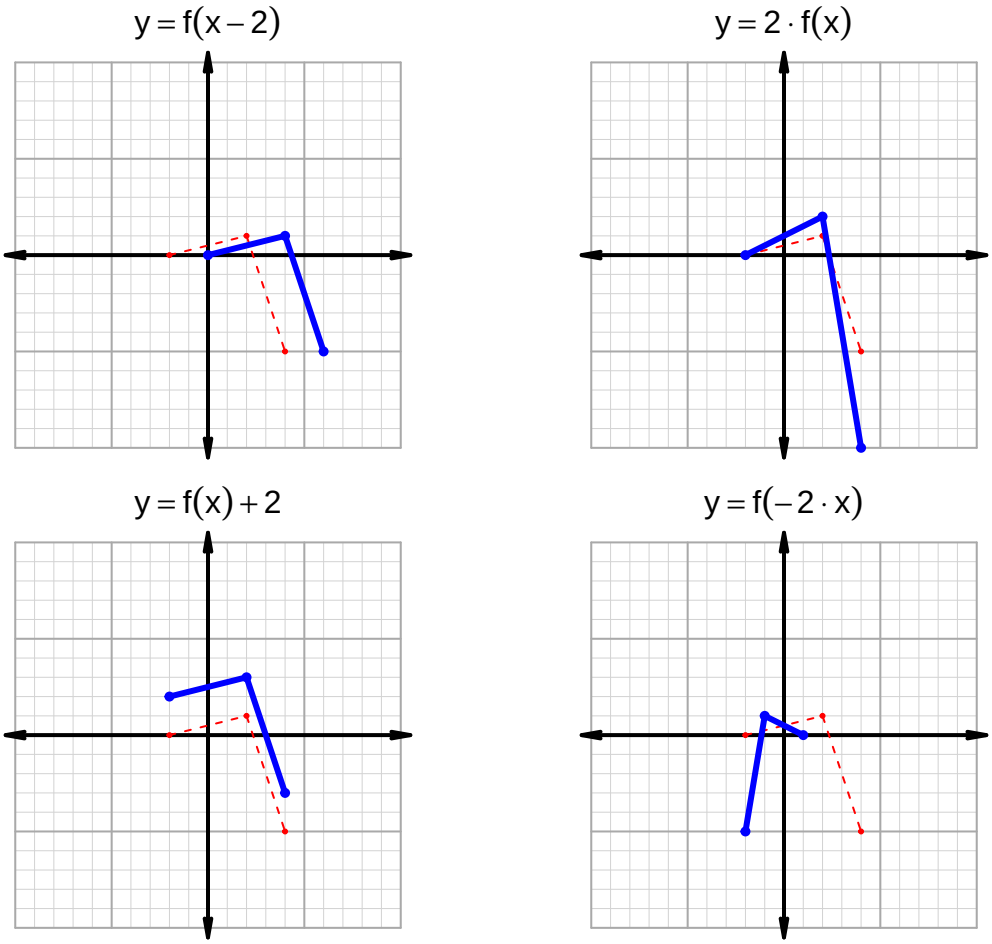
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 32$ and $x_2 = 67$. Express your answer as a reduced fraction.

x	$g(x)$
9	32
32	72
67	9
72	67

$\frac{f(67)-f(32)}{67-32} = \frac{9-72}{67-32} = \frac{-63}{35}$

The greatest common factor of -63 and 35 is 7. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-9}{5}$$